King County

GIS Cartographic Standards

Document History

Date	Who	Description
1-15-02	Mike Berman	Submitted to GIS Technical Committee for review.
2-25-02	Mike Berman	Final changes to the document and matrix from GIS Technical Committee and Cartographic Standards Workgroup.
4-29-02	Mike Berman	Document approved by GIS Oversight Committee.
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Table of Contents

1 Introduction 1
2 Purpose 1
3 The Standards Matrix 2
4 Tools 3
Appendix A: Standards Matrix 5
Appendix B: Sample Maps 5

1 Introduction

The GIS Technical Committee, as part of the King County GIS consolidation initiative, established the Cartographic Standards Workgroup. It is made up of cartographers and GIS analysts from throughout the County. The mission of the workgroup is to propose requirements, guidelines and best practices for King County GIS maps that will assist staff using GIS software to produce high-quality, consistent map products for the County. What follows is a set of requirements and guidelines that evolved through lengthy discussions over the course of many meetings and continues to be improved upon through input from users throughout the County.

The current members of the Cartographic Standards Workgroup are:

- Colette Flanagan, DOT (Transit)
- Mary Ullrich, DNRP (WTD)
- Fred Bentler, DNRP (WLRD)
- Todd Klinka, DNRP (WLRD)
- Gael Gilchrist, DES (Records and Elections)
- Patrick Jankanish, GIS Center (Chair)
- Greg Stought, GIS Center
- Tony Cooper, DDES

Please contact any of these individuals or your GIS Technical Committee representative to find out more about this workgroup.

2 Purpose

This document details the King County GIS Cartographic Standards, and describes tools to assist cartographers and GIS analysts in implementing the standard. The King County Executive requested that cartographers and GIS analysts work together to develop cartographic standards. The most general reason to have standards is to create a strong King County brand, so that the County's work is easily recognizable by the public. Cartographic standards also provide other advantages, such as:

- Ensuring basic practices of the profession are adhered to -- for example citing sources, defining symbols, providing a north arrow and scale, etc;
- Helping make our maps easier for customers (and ourselves) to interpret and understand by using standard symbols whenever practical;
- Allowing King County to automate some aspects of map production with GIS software;
- Speeding up the look-up and retrieval of old maps when needed to produce new copies;
- Shortening the learning curve for GIS users to produce maps meeting minimum quality standards; and
- Reducing time spent "re-creating the wheel" in general.

There will be some loss of cartographic freedom, but the standard was developed so as not to constrain the cartographer's ability to convey an appropriate message. We considered exceptions to each of the requirements to accommodate specific situations where the requirement would not apply. We also recommended a feedback mechanism so that cartographers are empowered to enhance the standard to suit changing business needs of King County.

3 The Standards Matrix

The cartographic standards matrix is provided in Appendix A. It details definitions, guidelines and requirements for a variety of cartographic objects that typically appear on maps. These standards apply to all maps created by King County staff using ESRI products such as ArcGIS, ArcInfo, ArcView, Internet Map Server (IMS), and MapObjects applications. It applies to maps created through IMS applications if those maps are meant to be finished King County products for distribution purposes. The standards do not apply to screen snapshots of views, web pages, or the ArcPlot graphics window. Nor does the standard apply to maps created by CAD software or illustration software such as Adobe Illustrator or Map Publisher even if these use geographic layers from a GIS.

There are twelve cartographic objects for which standards were developed. These include:

- North Arrow
- Disclaimer
- Logo
- Scale Bar
- Page Border & Map Border
- Agency Name
- Date
- File Location and Author
- Map Status
- Legend/Title
- Vicinity Map
- Paper Size

In addition, general standards that apply to all cartographic objects regarding the presence of an object, sizing, colors and fonts were developed.

Each row in the matrix represents a different entry for a specific object. There are three types of entries:

- *Definitions* provide a brief statement describing the object. This particularly pertains to compound objects that are composed of several individual components or for an object in which the name may be misleading. The Cartographic Standards Workgroup did not define all cartographic objects.
- *Requirements* are rules that must be adhered to when producing a map. Any noted exceptions will appear in the Exceptions column for the requirement.
- *Guidelines* are recommendations regarding the occurrence or format of cartographic objects that are not required as part of the standard. The guidelines are included to assist GIS staff in producing higher quality maps.

Each column of the matrix provides information about the specific standard. The columns are:

- *ID*: This is a unique identifier for the row and can be used to reference a particular matrix entry when commenting on the standard. Note that the ID may not be numbered sequentially in the table.
- *Subject/Element*: This references the cartographic object to which the standard pertains. The table is ordered such that the requirements, definitions and guidelines for any cartographic object occur together.
- *Requirement or Guideline*: This indicates the type of entry (i.e., requirement, guideline or definition).
- *Date Revised*: This refers to the date the standard was last revised. The revision date can be useful for quickly identifying changed standards.
- *Description*: This column describes the standard.
- *Exception Examples*: This column identifies any exceptions that might apply to a particular

requirement. It might also provide more information regarding a guideline or definition, but generally has “N/A” in the column for these two types of entries.

The Cartographic Standards Workgroup also solicited input from data maintainers for default symbology that would act as a guideline for representing features from the GIS Public Library. These will be incorporated into tools described in the next section that assist users to make maps.

4 Tools

Currently there are at least six applications to help ArcView 3.x users create maps. These are described below. Many of these applications do create maps that adhere to the cartographic standard, and the Cartographic Standards Workgroup has recommended to the GIS Technical Committee that a single application be developed to replace those which have the same functionality and which meet the standard.

- AvMaps: This is an ArcView extension that is supported by Transit GIS, resides on the Transit production server, and is dependent upon the data structure of that server. It allows users to add themes to a view by using a simple menu system. The themes are loaded using standardized symbology and queries. AvMaps also has a check box system that allows for quick and easy production of layouts (maps). All elements of the map are set so all the user has to do is indicate paper size, orientation, and write in the Title. Transit, Wastewater and Roads have used this tool.
- AvLib: This is an ArcView extension that is supported by KC GIS Center, resides on the KC GIS Center production server, and is dependent upon the data structure of that server. AvLib uses a sophisticated menu to select themes based on file names or aliases that are available in the GIS public library. The themes are loaded using standardized symbology and queries. Metadata is also available by double clicking the file name. The layout creation tool in AvMaps has been incorporated into AvLib. This tool is available to GIS users throughout the County.
- Parcel Tool: This is an ArcView extension that is used to use parcel information on the KC GIS Center production server and is dependent upon the data structure of that server. It combines the functionality of ArcView and Oracle through a system of menus to allow users to query the County’s cadastral information quickly and easily. It also produces a large sized basic quarter section map with all the survey (RECDNET) information. This tool is available to GIS users throughout the County.
- Base2 and AutoPlot: Base2 is an ArcView project developed by DDES, which has been adopted for use by several other agencies including Water and Land Resources, Wastewater Treatment, Council, and Environmental Health. It loads themes and customized buttons and menus that allow the user to work with parcel information and print a map from the view window. AutoPlot is a tool for printing a complex series of maps and is available in Base2 or as a separate ArcView project. DDES continues to maintain Base2 and AutoPlot, but no longer provides support to non-DDES users.
- Parkview: This is a standardized ArcView project used by Parks. It loads themes and customized buttons and menus that allow the user to work with park information and print a map from the view window.
- iMap: iMap is King County's online, interactive mapping application with integrated property search tool. It is a web browser based map viewer that provides online access to selected map layers in the King County Spatial Data Warehouse and other related information. GIS layers are grouped by subject into "map sets", and the map viewer can be customized to display any number of map sets. iMap includes a property search tool that is fully integrated with the basic application. A variety of other data query tools are also part the iMap toolbox, including "query", "find", "identify", "select", "measure" and "buffer", in addition to the standard navigational controls such as "pan", "zoom", and "zoom to extent". This application provides Internet users with a "front end" to the King County Spatial Data Warehouse. iMap puts basic GIS functionality and data access into the hands of King County employees and the general public, without having to purchase and train with full powered

GIS software. iMap operates in conjunction with ArcIMS software from ESRI. It is maintained by the GIS Center.

In addition to these products, legend files and scripts are created on a case-by-case basis. These should be used to make maps that adhere to the cartographic standard wherever appropriate.

Appendix A: Standards Matrix

See separate file for matrix.

Appendix B: Sample Maps

See separate file for map samples.